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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/786,575	02/23/2004	Toshihiko Takakura	10921.204US01	2516
23552	7590	04/18/2006	EXAMINER	
MERCHANT & GOULD PC P.O. BOX 2903 MINNEAPOLIS, MN 55402-0903			CHOI, HAN S	
			ART UNIT	PAPER NUMBER
			2853	

DATE MAILED: 04/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/786,575

Applicant(s)

TAKAKURA, TOSHIHIKO

Examiner

Han S. Choi

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 November 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2/23/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohmura et al. (US 2001/0033744) in view of Kurematsu et al. (US Pat. 5,816,677).

Ohmura et al. teaches an optical printhead [20] in [Paragraph 0057, Line 1] shown in Fig. 7. Ohmura et al. teaches a light source [22] in [Paragraph 0058, Lines 1-3] shown in Fig. 8. Ohmura et al. teaches a light guide [26] including a light incident surface facing the light source (the top of [26]) in and a flat light emitting surface (the bottom of [26]) extending in the primary scanning direction in [Paragraph 0069, Lines 4-5] shown in Fig. 9. Ohmura et al. teaches a rod lens array which interfaces with the light guide that transmits light to the rod lens array shown in Fig. 7, but does not explicitly teach the light collecting layer wherein the light collecting layer causes diffused light from the light emitting surface to be collected in a normal direction of the light emitting surface. Ohmura et al. does not teach the light guide including a counter surface arranged opposite to the light emitting surface wherein the counter surface is provided with a plurality of inclined portions for reflecting light traveling in the light guide so that light is directed toward the light emitting surface. Ohmura et al. does not teach a

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mirror reflector covering the counter surface. Ohmura et al. does not teach the light collecting layer comprising a first prism layer provided with a plurality of ridges extending parallel to each other, wherein each of the ridges includes a triangular section, wherein each of the ridges extend parallel to the primary scanning direction, further comprising a second prism cooperating with the first prism having the same stated features as the first prism.

Regarding claim 1, Kurematsu et al. teaches a light collecting layer [11] in [Col. 6, Lines 27-28] shown in Fig. 3. Kurematsu et al. teaches the light collecting layer [11] causing diffused light in [Col. 8, Lines 47-51] from the light emitting surface to be collected in a normal direction of the light emitting surface in [Col. 3, Lines 16-22] as shown in Fig. 14. Regarding claim 2, Kurematsu et al. teaches the light guide including a counter surface providing a plurality of inclined portions [20 and 10] for reflecting light traveling in the light guide so that light is directed toward the light emitting surface [11] in [Col. 6, Lines 28-29 and Lines 53-58] as shown in Fig. 3. Regarding claim 3, Kurematsu et al. teaches a mirror reflector [10] in [Col. 5, Lines 27-31] covering the counter surface [20] as shown in [Col. 6, Lines 53-58] as shown in Fig. 3. Regarding claims 4-8, Kurematsu et al. teaches the light collecting layer comprising a first prism [16] layer provided with a plurality of ridges extending parallel to each other, wherein each of the ridges includes a triangular section, wherein each of the ridges extend parallel to the primary scanning direction, further comprising a second prism [17] cooperating with the first prism having the same stated features as the first prism in [Col. 3, Lines 2-8] as shown in Fig. 16.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to incorporate the teachings of Kurematsu et al. with the optical printhead of Ohmura et al. for the purpose of improving illumination uniformity, having uniformity of leakage light, and to increase luminance.

Regarding claim 9, Ohmura et al. teaches a liquid crystal shutter [28] facing the light emitting surface of the light guide via the light collecting layer, wherein the liquid crystal shutter [28] comprises a plurality of shutter portions arranged in a row extending in the primary scanning direction in [Paragraph 0069, Lines 5-7 and Paragraph 0070, Lines 1-6] as shown in Fig. 9.

Regarding claim 10, Ohmura et al. teaches photosensitive recording medium [32] irradiated by the optical printhead [20] in [Paragraph 0047] as shown in Figs. 3 and 8.

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art references (US Pat. 5,011,271; US Pat. 6,750,979; US Pat. 6,479,942) cited in PTO 892 form show elements that are deemed to be relevant to the present invention. These references should be reviewed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Han S. Choi whose telephone number is (571) 272-8350. The examiner can normally be reached on Monday - Friday, 8:30am to 5:00pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

HSC
4/14/06

Hai Pham
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PRIMARY EXAMINER